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(71) Applicant(s)
Ross M. Hutchens

(54) Inventor(s)
Ross M. Hutchens

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PK00071

COMMONWEALTH OF AUSTRALIA

PATENTS ACT 1952-1982

APPLICATION FOR A PATENT

PATENT, TRADE MARKS & DESIGNS SUB-OFFICE
11 MAY 1990
SOUTH AUSTRALIA

I/We ROSS M. HUTCHENS

of Unit 9, 2 Henry Street, Payneham, South Australia, Australia

hereby apply for the grant of a Patent for an invention entitled

"AN IMPROVED CATCH FOR CUPBOARD DOORS"

which is described in the accompanying provisional/~~complete~~ specification.

My/Our address for service is care of R. K. MADDERN & ASSOCIATES, Patent Attorneys, 345 King William Street, Adelaide, South Australia.

Dated this 11th day of May, 1990

REPRINT OF RECEIPT
A002913 11/05/90

ROSS M. HUTCHENS

By his Patent Attorneys,
R.K. MADDERN & ASSOCIATES

R.S. CATT

TO:

THE COMMISSIONER OF PATENTS,
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FB 0418-0 1M 9/85

Our Ref: P1693/3665

COMMONWEALTH OF AUSTRALIA
PATENTS ACT 1952

DECLARATION IN SUPPORT OF AN APPLICATION FOR A PATENT OR PATENT OF ADDITION

In support of the Application
made by ROSS M. HUTCHENS

for a patent for an invention entitled

"AN IMPROVED CATCH FOR CUPBOARD DOORS"

I ROSS M. HUTCHENS

of Unit 9, 2 Henry Street, Payneham,
South Australia, Australia

do solemnly and sincerely declare as follows:-

1. I am the applicant for the patent.

2. I am the actual inventor of the invention.

Declared at ADELAIDE this 29th day of APRIL 1991.

TO: The Commissioner of Patents
Commonwealth of Australia

R K MADDERN & ASSOCIATES Citicorp House 345 King William Street
Adelaide South Australia 5000

PATENT, TRADE MARKS
& DESIGNS SUB-OFFICE
29 APR 1991
SOUTH AUSTRALIA

(12) PATENT ABSTRACT (11) Document No. AU-A-76240/91
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AN IMPROVED CATCH FOR CUPBOARD DOORS

International Patent Classification(s)
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(71) Applicant(s)
ROSS M. HUTCHENS

(72) Inventor(s)
ROSS M. HUTCHENS

(74) Attorney or Agent
R K MADDERN & ASSOCIATES , 345 King William Street, ADELAIDE SA 5000

(57) Claim

1. An improved door catch for doors, especially kitchen cabinet doors, comprising a catch member securable to a swinging door panel and rotatably supporting a wheel or roller for movement about an axis spaced from and parallel to the plane of said swinging door panel, said wheel or roller being arranged to engage a catch engaging member securable to a carcase to which the door panel is hinged, said catch engaging member comprising a resilient deflectable finger having a recessed portion intermediate its ends for receiving and retaining the roller or wheel when the swinging door panel is closed, and a ramp surface at its leading free end, arranged so that during the closing of the swinging door panel, the wheel or roller rides up over the ramp surface and simultaneously resiliently deflects the finger in a direction away from the roller or wheel until the latter engages in said recessed portion whereupon the door panel is held in its closed position by the catch.

COMMONWEALTH OF AUSTRALIA
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COMPLETE SPECIFICATION
(original)

FOR OFFICE USE:

Application Number: Class Int Class

Lodged:

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Name of Applicant: ROSS M. HUTCHENS

Address of Applicant: Unit 9, 2 Henry Street, Payneham, South Australia, Australia

Actual Inventors: ROSS M. HUTCHENS

Address for Service: C/- R K MADDERN & ASSOCIATES, 345 King William Street, Adelaide, South Australia, Australia

Complete Specification for the invention entitled:

"AN IMPROVED CATCH FOR CUPBOARD DOORS"

The following statement is a full description of this invention, including the best method of performing it known to me.

PATENT, TRADE MARKS & DESIGNS SUB-OFFICE
29 APR 1991
SOUTH AUSTRALIA

This invention relates to an improved catch for doors, and in particular an improved roller catch design for use on cupboard or cabinet doors, especially corner doors.

It is now common place for cabinet arrangements installed in the kitchen for example to include a swinging corner cabinet door which comprises first and second door panels hinged together for relative hinging movement between a closed position wherein the first and second door panels are at right angles to one another and close off a corner opening in the cabinet carcase, and an open position wherein the first and second doors are swung outwardly so as to permit access to the corner opening of the carcase. Such corner doors enable a more efficient use of cabinet space and allow easier access to corner spaces of the cabinet. However, such corner door arrangements have not been generally satisfactory and a need has arisen for a better system to ensure that the door panels of the corner door are properly aligned when in their closed position. In some instances, the hinged door panel (that is, the door panel which is hinged to the carcase) has a tendency to twist or drop due to the weight of the "floating" door panel hingedly supported from it or due to the hinge bending or deforming, so as to become loose, through rough handling. One solution which has been used to remove the door twist has been to fit an additional catch, generally a conventional roller catch on account of its strength, to the hinged door thereby making it necessary to instal two catches. One must then ensure that the roller catch is fully engaged prior to the closing of the "floating" door which is normally held closed by a magnetic catch.

In addition, the 180° hinges used to hinge the hinged door to the cabinet carcase, normally have an inbuilt catch system which does not have the strength to resist the twisting action to which the door is subjected during use.

In many cases, a roller catch is not fitted to the hinged door and as a result the hinged door, over a period of time and usage, develops a permanent twist which in turn may

result in the "floating" door causing damage e.g., dents or scratches to an adjacent door as the top edge of the door "tilts" over and comes into contact with the surface of an adjacent door during, for example, the closing operation.

Solid timber doors have a greater tendency to twist than pressed doors but any pressed door over 350mm in width is likely to show at least some signs of twisting over a period of time.

Regardless of the twisting effect, a cabinet door adjacent to the "floating" door of a corner door assembly is vulnerable to damage through contact with the counterpiece of the magnetic catch and the handle retention screws of the "floating" door, particularly if the operator is not careful to ensure that the hinged door panel is properly closed prior to closing the "floating" door panel.

It is an object of the present invention to provide an improved catch for a cupboard door assembly which will allow the door to be smoothly opened and closed with very little manual effort.

It is another object of the present invention to provide an improved corner door catch arrangement which will obviate the twisting problems associated with the hinged door and also minimise the likelihood of any damage being done to an adjacent cabinet door during the closing of the corner door assembly.

It is a further object of the present invention to provide an improved door catch for a corner cabinet door which eliminates the need to use any additional catch device in crder to ensure that the door panels of the corner door assembly are properly aligned and retained securely in position when in the closed condition.

It is a still further object of the present invention to provide an improved door catch which is of simple and inexpensive design, and easy to instal.

In one aspect of this invention therefore, an improved door catch for a cabinet door assembly wherein a door panel is hingedly mounted with respect to a cabinet carcase, comprises a catch member securable to the door panel and rotatably supporting a wheel or roller for movement about an axis spaced from and parallel to the plane of said swinging door panel, said wheel or roller being arranged to engage a catch engaging member securable to the carcase adjacent the opening for the door panel, said catch engaging member comprising a resilient deflectable finger having a recessed portion intermediate its ends for receiving and retaining the roller or wheel when the door panel is closed, and a ramp surface at its leading free end, arranged so that during the closing of the door panel, the wheel or roller rides up over the ramp surface and simultaneously resiliently deflects the finger in a direction away from the roller or wheel until the latter engages in said recessed portion whereupon the door panel is held in its closed position by the catch.

According to another form of this invention, an improved door catch for a corner door assembly of the type having a pair of hingedly interconnected door panels, one of which constitutes a "floating" door panel, the other a hinged door panel hingedly mounted to a cabinet carcase, said panels being arranged when in their closed position, to close off a corner opening of the cabinet carcase, said catch comprising a catch body member securable to the "floating" door panel of the corner door assembly and rotatably supporting a wheel or roller for movement about an axis spaced from and parallel to the plane of said "floating" door panel, said wheel or roller being arranged to engage a catch engaging member securable to the cabinet carcase adjacent said opening, said catch engaging member comprising a resilient deflectable finger having a recessed portion intermediate its ends for receiving and retaining the roller or wheel when the "floating" door panel is closed, and a ramp surface at its leading free end,

arranged so that during the closing of the "floating" door panel, the wheel or roller rides up over the ramp surface and simultaneously resiliently deflects the finger in a direction away from the roller or wheel until the latter engages in the recessed portion, whereupon the "floating" panel and the hinged panel are retained firmly in their closed positions.

Preferably, the catch is designed so that, when the door panels are closed with the wheel or roller retained by the finger, the finger is under slight tension, this being effective to ensure that the hinged panel remains properly closed in an untwisted condition.

In a preferred arrangement of this invention, the catch body member comprises a pair of spaced apart L-shaped flange members interconnected by a web, said L-shaped flanges rotatably supporting therebetween said wheel or roller, the annular peripheral surface of which is preferably moulded of a relatively soft plastics or rubber-like material.

Preferably, the roller or wheel has a radius which exceeds its axial length.

When the catch is used for a corner assembly with the door panels in their closed position, the retaining pressure transmitted to the panels by the catch is sufficient to ensure that the hinged door panel is retained shut in an untwisted condition. In addition, any damage to an adjacent door surface is greatly minimised by the use of the relatively soft wheel or roller which is the only part of the catch arrangement which can make contact with said adjacent door surface.

In order to more fully describe the present invention, several embodiments are described hereunder with reference to and as illustrated in the accompanying drawings, in which:

FIG. 1 is a plan view of a door catch arrangement according to one embodiment of the invention, used with a corner door assembly;

FIGS. 2(a)-(c) are views of the roller or wheel assembly shown in FIG. 1.

FIG. 3 is a perspective view of the counterpiece or keeper shown in FIG. 1;

FIG. 4 is a sectional elevational view of a counterpiece or keeper according to another embodiment;

FIG. 5 is a perspective view of a counterpiece or keeper according to yet another embodiment of the invention.

In the embodiment shown in FIGS 1 to 3, reference is made to a corner door assembly 10 for closing a corner opening of a kitchen cabinet, the corner door assembly comprising a "floating" door panel 11 hinged by conventional hinge means to a hinged door panel 12, the hinged door panel 12 being hinged to a frame member (not shown) of the cabinet carcase 13 for hinging movement about a vertical axis.

The catch assembly 14 comprises a body member 15 which is preferably moulded of plastics material, and which is secured to the door panel 11, and a striker or keeper member 16 secured to a vertically disposed fixed interior panel 17 of the cabinet carcase 13. The body member 15 comprises a pair of spaced apart horizontally projecting flanges 18 which rotatably support vertical stub pivot pins 19 of a rotary wheel 20 which rollingly engages the striker member 16. Each flange 18 terminates along its inner end in a vertically extending flange 21 which is in contiguous engagement with the inner face of the door panel 11 and secured thereto by means of screws or other suitable fasteners (not shown). The flanges 21 are interconnected by web 22. The wheel 20 projects beyond the periphery of the aligned flanges 18 and is centrally located therebetween.

The wheel 20 is freely rotatable on pivot pins 19 and preferably is made from a plastic such as nylon. It is desirable that the annular peripheral surface of the wheel 20 is formed of a plastics or rubber-like material which is less likely to cause damage to any adjacent surface with which it might contact during the closing movement thereof. In this embodiment, the wheel 20 comprises a hub 24 of rigid plastics material to which is fitted a rim 25 of relatively soft resilient plastics material.

The striker member 16 is formed with a mounting portion 26 which is held fast against the inner surface of the fixed panel 17 of the carcase 13 by means of screws or nails insertable through holes 27, the mounting portion 27 connecting to a resilient deflectable finger 28 which extends approximately parallel to the plane of the carcase panel 15 when in its undeflected state. The deflectable finger 28 comprises a ramp surface 29 at its leading free end which connects to a concavely curved recessed portion 30 which receives and retains the wheel or roller 20 when the door panel 11 is closed.

In this embodiment the striker member 16 is secured to the inside of the interior dividing panel 17 and positioned so that the free end of the deflectable finger 28 is almost in horizontal alignment with the front edge surface 31 of the panel 17 whereby during the closing movement of the door panel 11 the wheel 20 will normally first contact the leading end of the finger 28 (rather than the front edge surface of the panel 17).

Upon closing the door panel 11, the wheel 20 first makes contact with the leading end of the finger 28 and rides up over the ramp surface 29, at the same time causing the finger 28 to deflect towards the panel 17 of the cabinet carcase 13, until such time as the wheel 20 engages in the recessed portion 30 whereat it then holds the door panel 11 in its closed position, and at the same time ensures that the hinged

door 12 is properly retained in its closed position in an untwisted condition. When the door panel 11 is opened, the finger 28 is once again deflected away from the wheel 20 which rides up over the peak 32 after which it then traverses downwardly over the ramp surface 29 whereupon it disengages from the member 16, following which the door panel 11 can be swung to an open position followed by the opening of the hinged door 12 to permit access to the corner opening of the cabinet carcase 13.

In a variation to the abovedescribed embodiment, the striker or keeper member 16 shown in FIG. 4 is provided with a flat land portion 34 between the ramp surface 29 and the recessed portion 30, the land portion 34 lying in a plane which is laterally offset from the surface 35 of the mounting portion 26. The member 16 is also provided with a locating pin or protuberance 36 which is arranged to locate in a hole or recess in the wall of the panel 17 in order to assist the installation thereof.

Referring to FIG. 5 of the drawings, there is shown a striker or keeper member 40 which is designed to be mounted on the underside of an upper horizontal carcase panel or frame member (not shown) rather than to a side vertical panel as shown in FIG. 1. In this case, the mounting portion 41 is of box-like configuration and is provided with vertically extending holes 42 for receiving fastening screws or nails. A pair of resiliently deflectable vertically aligned fingers 43 are integrally formed with the portion 41, each finger 43 being configured substantially identical to finger 28 shown in FIG. 3. By employing two fingers slightly spaced apart, the member 40 can be used for both right-hand or left-hand opening doors, by simply rotating through 180°.

It should of course be appreciated that the catch assembly of the present invention is not necessarily limited for application to corner door assemblies and can be used as a catch for most cabinet doors, especially kitchen cabinets.

It will thus be clear that the improved catch of this invention enables a corner cupboard door to be easily opened and closed, and when so closed, holds the two door panels securely in position so that they are correctly aligned within the corner angle opening, and further enables the hinged door to be closed without a secondary catch.

CLAIMS

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. An improved door catch for doors, especially kitchen cabinet doors, comprising a catch member securable to a swinging door panel and rotatably supporting a wheel or roller for movement about an axis spaced from and parallel to the plane of said swinging door panel, said wheel or roller being arranged to engage a catch engaging member securable to a carcase to which the door panel is hinged, said catch engaging member comprising a resilient deflectable finger having a recessed portion intermediate its ends for receiving and retaining the roller or wheel when the swinging door panel is closed, and a ramp surface at its leading free end, arranged so that during the closing of the swinging door panel, the wheel or roller rides up over the ramp surface and simultaneously resiliently deflects the finger in a direction away from the roller or wheel until the latter engages in said recessed portion whereupon the door panel is held in its closed position by the catch.

2. An improved door catch for a corner door assembly of the type having a pair of hingedly interconnected door panels, one of which constitutes a "floating" door panel, the other a hinged door panel hingedly mounted to a cabinet carcase, said door panels being arranged, when in their closed position, to close off a corner opening of the cabinet carcase, said catch comprising a catch member securable to the "floating" door panel and rotatably supporting a wheel or roller for movement about an axis spaced from and parallel to the plane of said "floating" door panel, said wheel or roller being arranged to engage a catch engaging member securable to the cabinet carcase adjacent said opening, said catch engaging member comprising a resilient deflectable finger having a recessed portion intermediate its ends for receiving and retaining the roller or wheel when the "floating" door panel is closed, and a ramp surface at its leading free end arranged so that during the closing of the door panels, the wheel or roller rides up over the ramp surface and simultaneously resiliently

deflects the finger in a direction away from the roller or wheel until the latter engages in said recessed portion, whereupon the "floating" panel and the hinged panel are retained in their closed positions.

3. An improved door catch according to either claim 1 or claim 22 wherein said deflectable finger extends horizontally and wherein said axis of rotation of said wheel or roller extends vertically.

4. An improved door catch according to any one of claims 1 to 3 wherein said catch member comprises a pair of horizontally projecting spaced apart flanges which rotatably support therebetween said wheel or roller, said flanges being interconnected by a web at right angles to said flanges.

5. An improved door catch according to any one of the preceding claims wherein said wheel or roller has a radius which exceeds its axial length.

6. An improved door catch according to any one of the preceding claims wherein said wheel or roller is of moulded construction and comprises a hub of rigid plastics material to which is fitted a rim of relatively soft resiliently plastics or rubber-like material.

7. An improved door catch according to any one of the preceding claims wherein said catch engaging member comprises a projecting pin or boss remote from the deflectable finger arranged, in use, to locate in a hole or recess in the cabinet carcase for locating the catch engaging member during installation thereof.

8. An improved door catch according to any one of the preceding claims wherein said catch engaging member comprises a mounting body portion provided with vertically extending fastener receiving holes for securing the catch engaging member to a fixed horizontal panel of the carcase, there being two said deflectable fingers vertically spaced apart

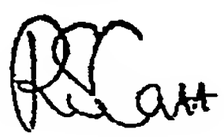
and aligned vertically with one another, integrally formed with said body portion to one side thereof.

9. An improved door catch for doors according to any one of the preceding claims wherein said catch engaging member is integrally moulded of plastics material.

10. An improved door catch assembly substantially as hereinbefore described and illustrated in FIGS. 1 to 3 of the drawings or as modified in FIGS. 4 or 5 thereof.

DATED this 29th day of April 1991

ROSS M. HUTCHENS
By his Patent Attorneys
R K MADDERN & ASSOCIATES



DRAWINGS

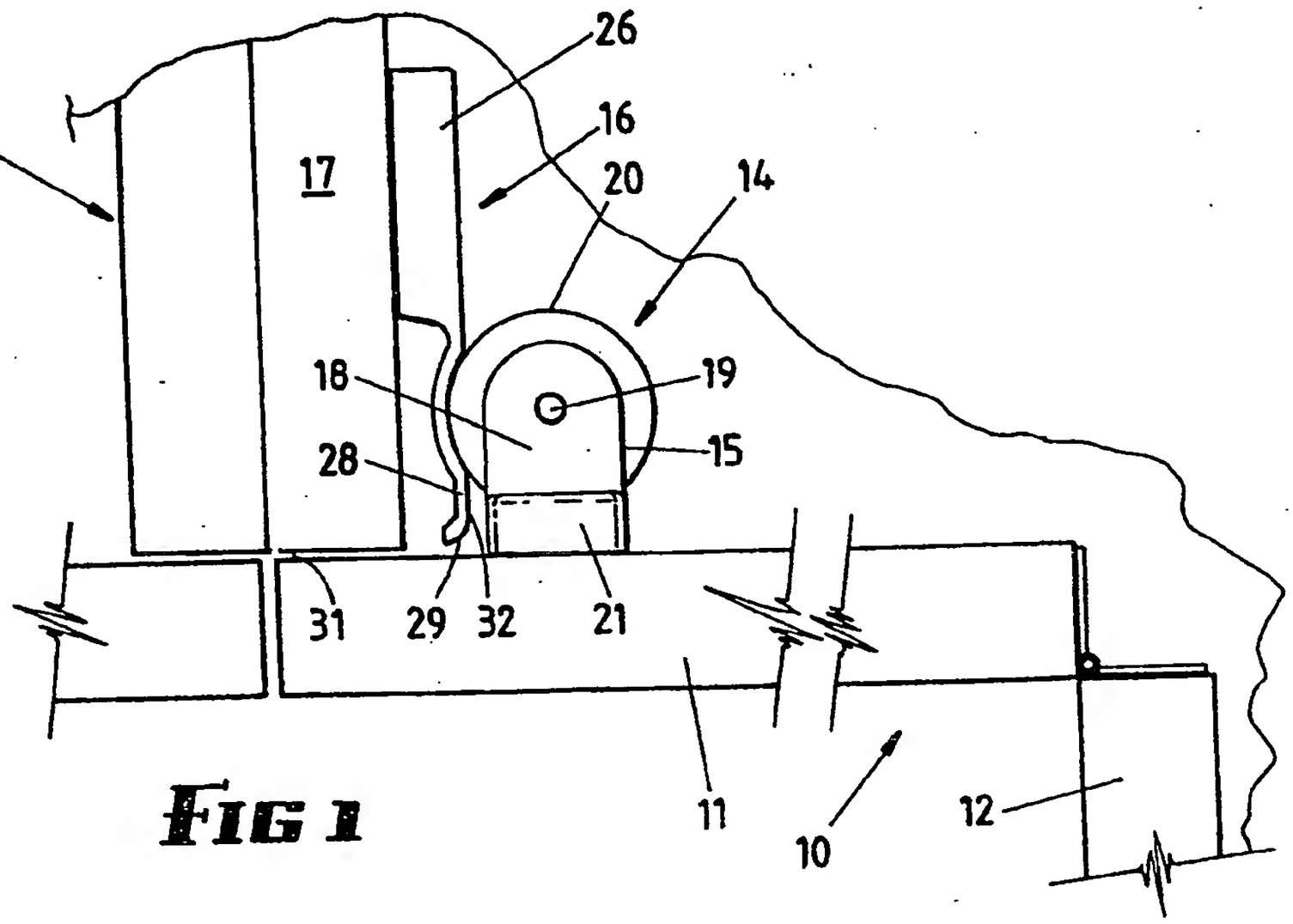


FIG 1

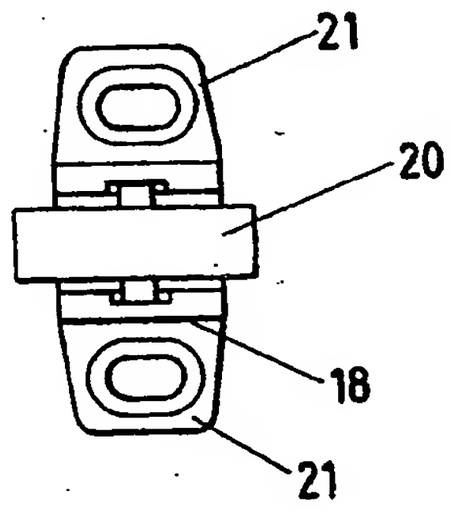


FIG 2a

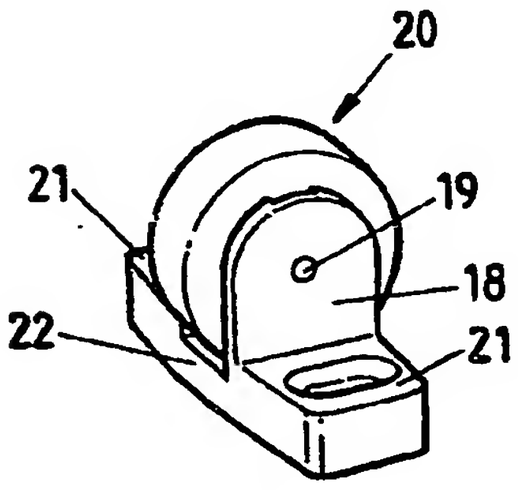


FIG 2b

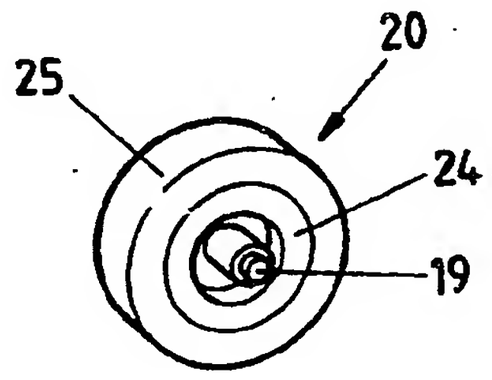


FIG 2c

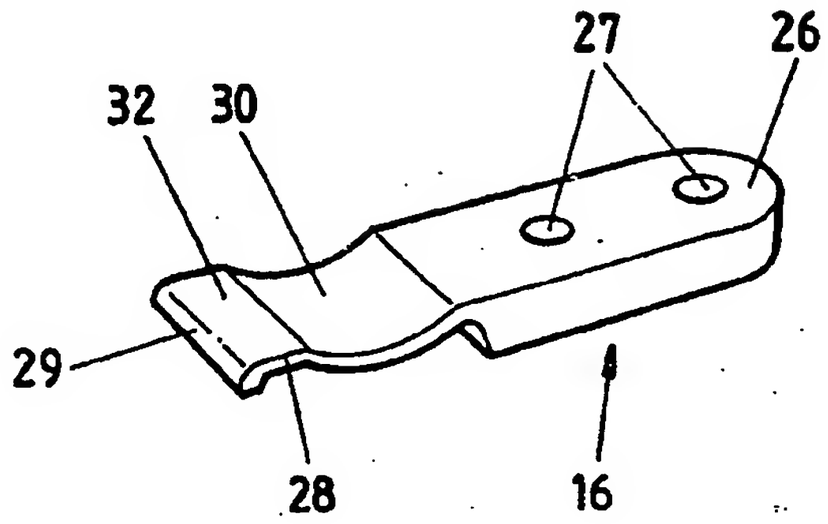


FIG 3

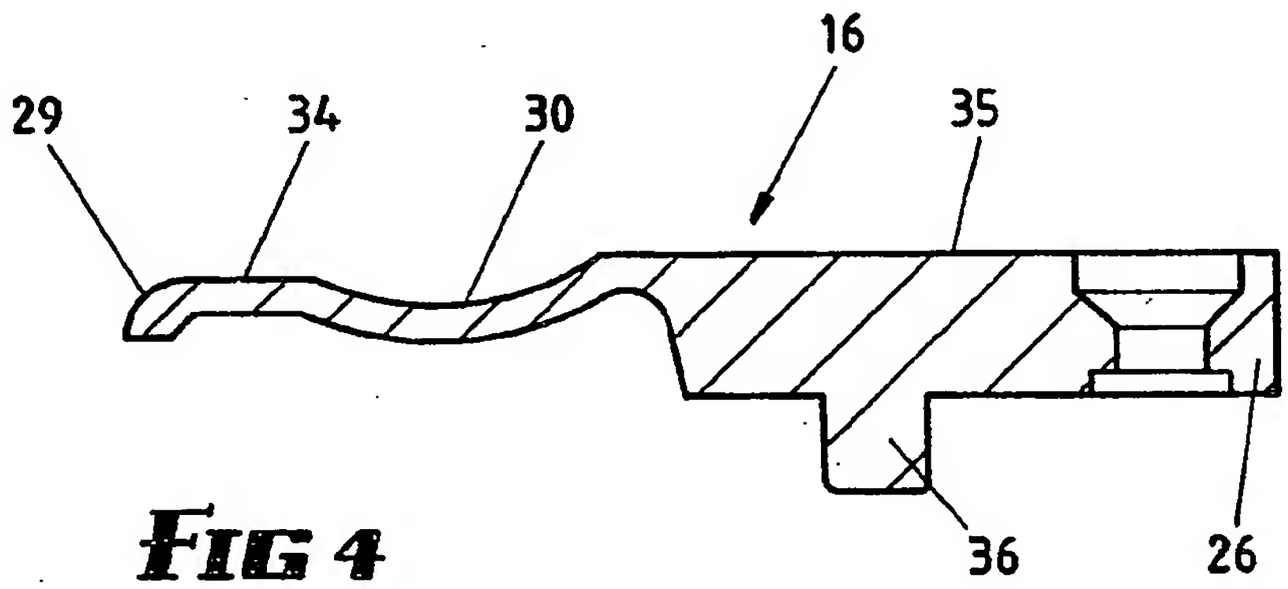


FIG 4

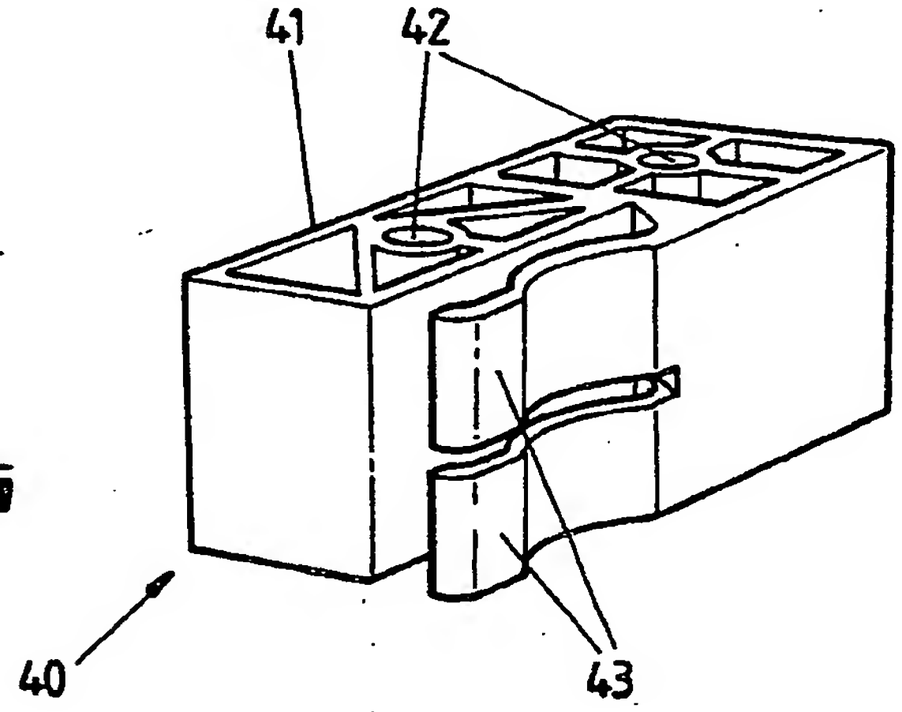


FIG 5

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